

Patent

Attorney's Docket No. 1010315-000092

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Kent Malmgren et al.

Application No.: 09/651,130

Filed: August 3, 2000

For: ABSORBENT FOAM MATERIAL, A  
METHOD OF PRODUCING IT AND  
AN ABSORBENT STRUCTURE  
CONTAINING SAID FOAM  
MATERIAL

) **Mail Stop:**

) **APPEAL BRIEF - PATENTS**

) Group Art Unit: 1794

) Examiner: Victor S. Chang

) Confirmation No.: 1064

) Appeal No.: 2008-2394

**REQUEST FOR REHEARING UNDER 37 C.F.R. § 41.52**

**Mail Stop APPEAL BRIEF - PATENTS**

Commissioner for Patents

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Alexandria, VA 22313-1450

Sir:

Appellants hereby request a rehearing of the original decision of the Board dated July 2, 2008.

Appellants respectfully assert that the Board has erred in its holding in at least two areas. First, the Board has not properly considered the fact that there are several result effective variables which have competing (i.e., inconsistent) demands for the structure of a foam material. Second, the Board has not properly considered the fact that the recited combination of results had not been recognized as a desirable combination anywhere in the prior art.

**I. Claimed Criteria Have Competing Demands on Foam Structure**

The Board states:

The present record establishes that a person of ordinary skill would have recognized that various absorption properties, e.g., acquisition, distribution, and liquid storage properties, could have been used in the open cell polymeric foam material of *Chen*. One of ordinary skill in the art would have readily appreciated that these properties of open cell foam absorbent articles are known result effective variables, as evidenced by *Chen*. For this reason, an artisan would have sought to determine suitable values for these properties in the open cell polymeric absorbent foam taught by *Chen*.

*Decision on Appeal*, Page 7, lines 8-17.

Appellants respectfully disagree. The foam material recited in present claim 1 calls for a careful balancing between various competing properties. The production of this material requires precise balancing of factors, including a) manner, b) timing, c) amounts, d) temperatures, e) concentrations, etc., such as those set forth in specific embodiments of the Specification of the present application, at page 10, line 8 to page 12, line 20, and Examples 1-3. For example, the present specification describes in detail, at page 10, line 8 to page 12, line 20, an exemplary process for producing the recited foam material, including: (1) preparation of a polymer solution; (2) addition of a surfactant to form a foam; (3) optional addition of fibers; (4) optional addition of an alkaline compound; (5) crosslinking with a crosslinking agent; (6) shaping followed by freeze/thaw treatment; and (7) washing and drying.

The Board's Decision ignores the fact that certain of the production factors may increase one of the claimed properties, while decreasing others. For example, it is well known that qualities of a product that would tend to increase the absorption rate would simultaneously decrease the storage capacity. See the paragraph bridging pages 4 and 5 of the Appeal Brief:

One reason *Chen* does not teach the claimed invention is that *Chen* does not recognize the competing (opposite) absorption properties. For example, known absorbent materials were able to provide either a high absorption rate or a high liquid storage capacity. But, not both. See Table 1 and Examples 1-3 of the Specification. That is, adjusting the process parameters to provide foam with a high absorption rate typically results in a low liquid storage capacity. And, adjusting the process parameters to provide a foam with a high

liquid storage capacity typically results in a low absorption rate. *Chen* does not recognize this concern. Nor, does *Chen* teach one skilled in the art how to overcome these competing properties.

*Chen* discloses, at most, a generic open-cell polymeric foam. *Chen* does not describe details and balancing of reaction conditions which can lead to the specific open-cell polymeric foam recited in present claim 1. As demonstrated by the Declaration evidence of record, following the process described in Example 3 of *Chen*, which is the closest example therein to the disclosed invention, did not result in a foam material which meets all of the recited properties. Specifically, absorbent foams of Samples A, B and C were prepared according to Example 3 of *Chen* and treated on three different sections thereof. The absorbent foam of Sample A, though meeting the recitations of present claim 1 in terms of absorption rate and storage capacity, does not meet the requirements of present claim 1 in terms of liquid distribution capacity and pore volume distribution. In addition, the absorbent foams of Samples B and C did not possess properties meeting the recitations of present claim 1, in terms of absorption rate, storage capacity, liquid distribution capacity and pore volume distribution.

*Chen* does not recognize the competing (opposite) absorption properties. Therefore, in light of the disclosure of *Chen*, it would not have been obvious to one of ordinary skill in the art to produce a foam material satisfying the properties recited in present claim 1.

Moreover, arriving at the presently claimed invention is not the result of optimizing traditional result-effective variables. One of ordinary skill in the art could not simply optimize one variable (e.g., absorption rate), then hold that variable steady whilst optimizing another variable (e.g., liquid storage capacity). This was not known in the prior art nor taught in *Chen*. Adjusting the process parameters affects both variables. Thus, according to the teachings of the prior art, once the absorption rate is optimized, attempts to change the process parameters to optimize liquid storage capacity will necessarily affect the absorption rate. Thus, in the prior art, only one parameter of absorption rate and liquid storage capacity could be optimized. However, Appellants have unexpectedly discovered a foam that has optimized both absorption rate and liquid storage capacity.

In footnote 5 of the Board's Decision, the Board indicated that Appellants' representative stated that the foam properties are "known result effective variables." The Decision ignores the fact that Appellants' representative further stated:

There is a couple of factors. One is that these results can have competing interests on the product. In other words, if you want to increase the absorption rate, you might affect the overall storage capacity. They may be inversely proportional. So it is not obvious to just modify the product to increase all of the variables in a positive way.

Thus, to state that the claimed criteria are "known result effective variables" ignores the important factor that the results compete against each other with regard to the foam structure.

Therefore, the variables are not traditional result-effective variables. The variables are interdependent and optimization of absorption rate, liquid distribution capacity and liquid storage capacity is not a simple linear optimization.

## **II. Chen Does Not Teach the Recited Combination of Criteria**

In the Board's Decision, it is acknowledged that *Chen* does not teach the claimed combination, and as a result, the § 102 rejection has been properly reversed. Specifically, the Board recognizes that *Chen* does not teach two of the four claimed properties.

Additionally, there are no description or suggestions in *Chen* of the desirability of the combination of the presently recited properties. Specifically, although some of the properties may have been recognized independently as desirable, there is no teaching or suggestion that the specifically recited combination is desirable. This fact is significant in view of the issue discussed in the preceding section, i.e., the claimed criteria have inconsistent demands on the foam structure.


The Board concludes that an artisan would have been able to determine suitable values for the claimed criteria. However, absent some teaching of the desirability of the claimed combination of properties, there is no reason an artisan would have even tried to determine such values. Therefore, there would not have been motivation for one of ordinary skill in the art to strive for the presently claimed foam material.

It is not believed that any fees are due with this filing. However, the Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

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